

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPEAL BRIEF FOR THE APPELLANT

Ex parte RAJANIEMI

METHOD FOR A SECURE DETACH PROCEDURE IN A  
RADIO TELECOMMUNICATION NETWORK

Serial No. 09/627,684

Appeal No.:

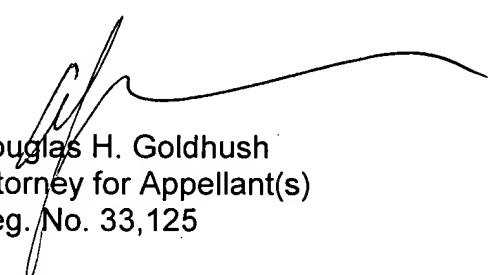
Group Art Unit: 2681

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Appeal Brief (in triplicate)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
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In re the Appellant:

RAJANIEMI



Appeal No.:

Serial Number: 09/627,684

Group Art Unit: 2681

Filed: July 28, 2000

Examiner: Sheila B. Smith

For: METHOD FOR A SECURE DETACH PROCEDURE IN A RADIO  
TELECOMMUNICATION NETWORK

BRIEF ON APPEAL

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I. INTRODUCTION

This is an appeal from the action of the Examiner dated June 25, 2003, finally rejecting claims 1-21, all of the claims pending in this application, as being unpatentable over certain prior art under 35 USC § 102 and 35 USC § 103. A Request for Reconsideration was filed under 37 CFR § 1.116 on September 23, 2003. An Advisory Action dated November 4, 2003 was received, indicating that the Request for Reconsideration had been considered, but did not place the application in condition for allowance. A Notice of Appeal and appropriate extension of time was filed on November 25, 2003. This Appeal Brief, therefore, is being timely filed.

II. REAL PARTY IN INTEREST

The real party in interest in this application is Nokia Networks Oy, of Espoo, Finland, by virtue of an Assignment which was submitted for recordation on November 8, 2000, and which was recorded at Reel 011244, Frame 0712, on November 13, 2000. It

is noted that Nokia Networks Oy is wholly owned by Nokia Corporation, also of Finland.

### III. STATEMENT OF RELATED APPEALS AND INTERFERENCES

There are no known related appeals and/or interferences regarding the subject matter of this invention.

### IV. STATUS OF CLAIMS

Claims 1-21, all of the claims pending in the present application, are rejected as being unpatentable over certain prior art. All of the rejections are being appealed.

### V. STATUS OF AMENDMENTS

Claims 1-21 were amended in a response which was filed by Certificate of Mailing on March 20, 2002. No further amendments have been made, and no amendments, therefore, are pending.

### VI. SUMMARY OF THE INVENTION

The invention is directed to various embodiments of a method for performing a detach of a terminal registered to a telecommunication network, and also to a method for registration of a terminal to a telecommunication network. Additionally, the invention is directed to a terminal device, a network controlling device, and a telecommunication system, each of which carries out these methods. Referring, for example, to Figure 2, a method of detach according to one embodiment of the invention is illustrated. Though claim 1 is directed to detach, and claim 9 is directed to registration, it may be most helpful

to initially discuss the registration method, an example of which is illustrated in Figure 1.

As discussed beginning on page 8, line 16, after "start" step S0, mobile station MS checks to see whether a registration condition is present. If the registration condition is not present, which may occur, for example, when a mobile station newly attaches to network NW, step S1 occurs repeatedly to check whether a registration condition is present. If a registration condition is determined, the method proceeds to step S2, wherein mobile station MS sends a registration request REG\_REQ to network NW. In step S3, registration request REG\_REQ is received by the network controlling device, which then can determine or select an identification, such as TMSI, for the requesting mobile station. In step S4, the network NW, or more particularly the network controlling device MSC, can derive an identification signature TMSI\_SIG for the identification TMSI.

The signature may also be derived by mobile station MS itself, upon receipt of a corresponding instruction from the network. In step S5, the identification and the identification signature are allocated to mobile station MS (page 10, line 5). This allocation can be performed in a secure mode, for security reasons. In step S6, network NW transmits TMSI and TMSI\_SIG, to inform the mobile station of the allocated identification and allocated identification signature. The registration procedure is then completed.

Figure 2, as mentioned previously, illustrates a flow chart of one example of a detach procedure as recited in claims 1-8. The procedure starts at step S8, and at step S9 a station checks whether a predetermined condition, in particular a detach condition, is present on the mobile station side. A power off state, low battery state, or similar state might initiate the detach. A user actuated command may also initiate the detach

condition, as discussed on page 10, line 30 of the specification. If the detach condition does not exist, the checking of step S9 repeats. If a detach condition is detected, mobile station MS sends a detach request DET\_REQ to network NW, in particular to the network controlling device. The DET\_REQ request would contain the identification TMSI and the identification signature TMSI\_SIG, which had previously been allocated to the mobile station MS upon registration of the mobile station to the network. An example of the data format for the detach request is illustrated in Figure 3. After the detach request is sent in step S10, the detach request is received in step S11 at the network controlling device. In step S12, the received detach request DET\_REQ is compared with a record of the registration data of the terminal which is kept at the network side, and is the record of the previously assigned TMSI and TMSI\_SIG. If the record data matches the data in the DET\_REQ, then the detach occurs at step S14. If the DET\_REQ does not match the data in the record, the detach is not completed as shown in step S13, and the detach procedure will end at step S15.

In addition to the methods discussed above, the invention also includes a terminal device, a network controlling device, and a telecommunication system which implement these methods.

## VII. ISSUES

Claims 1-6, 9, and 19-21 were rejected under 35 USC § 102(e) as being anticipated by Dean (U.S. Patent No. 6,173,173). Claims 7, 8 and 10-18 were rejected under 35 USC § 103(a) as being unpatentable over Dean in view of Kuriki (U.S. Patent No. 5,765,105). In making this obviousness rejection, the Examiner took the position that

Dean disclosed all of the elements of the claimed invention, with the exception of a temporary subscriber and international subscriber identity. Kuriki is cited as curing the deficiencies in Dean. The Official Action then took the position that it would have been obvious to a person of ordinary skill in the art to combine Kuriki and Dean to yield the claimed invention.

The issues on appeal, therefore, is whether or not Dean when viewed alone or Dean when combined with Kuriki provide a sufficient basis upon which to reject claims 1-21. As will be discussed below, this Appeal Brief will show that these rejections should be withdrawn, and this application passed to issue.

#### VIII. GROUPING OF CLAIMS

For each ground of rejection discussed above, applicants respectfully submit that each of claims 1-21 stands alone. In other words, each of the presently pending claims are separately patentable.

#### IX. APPELLANT'S ARGUMENTS

Applicants respectfully submit that each of pending claims 1-21 recite subject matter which is neither disclosed nor suggested by Dean when viewed alone, or Dean when combined with Kuriki.

Claim 1, upon which claims 2-8 and 19-21 are dependent, recites a method for performing a detach of a terminal registered to a telecommunication network by associating an identification for the terminal, deriving a signature for the identification, and allocating a pair consisting of the identification and the signature to the terminal. The

method comprises a step of sending, receiving, comparing and detaching. The sending step sends a detach request including the identification and the identification signature from the registered terminal to the network. The receiving step receives the detach request at the network side. The comparing step compares the received detach request with a record of registration data of the terminal kept at the network side. The detaching step detaches the terminal from the network, if the received detach request coincides with the record of registration data.

Claim 9, upon which claims 10-18 are dependent, recites a method for registration of a terminal to a telecommunication network. The method comprises the steps of associating an identification for the terminal, deriving a signature for the identification, and allocating a pair consisting of the identification and the signature to the terminal.

As a result of the claimed invention, a system and method for performing a secure detach procedure in a radio telecommunication network is provided. One advantage of the present invention is that a simple and useful method is provided for preventing a malicious user from interrupting a third party's calls by sending detach messages with random identities to mobile stations. These advantages are not all inclusive but are merely examples of some of the benefits of the invention. As will be discussed below, applicants respectfully submit that the cited prior art fails to disclose or suggest the subject matter of the presently pending claims.

Dean discloses an invalid mobile telephone call terminating system and method. In particular, Dean focuses on a reliable method of "tearing down" a suspected fraudulent call. Utilizing RF fingerprinting to determine whether a call is invalid or fraudulent, a kill-call command is transmitted over a network to a "kill-call server" that interfaces with

a mobile service center through a data link interface. The kill-call server then determines whether a kill-call command is valid, and then transmits a "message tear down request" over the data link interface to a processor which then conveys a call termination message to an administrative call processing database node. However, the kill-call command in Dean cannot be considered to be comparable to either a message registration or detach as recited in the presently pending claims. Dean is focused only on addressing issues with a particular call, and does not at all address the issue of registration or detach of a terminal from a network. Even though a call may be killed according to Dean, the mobile terminal or the mobile telephone may remain registered to the network if it is already registered, or remain unregistered if it is not registered. The kill-call configuration and tear down process which is illustrated in Dean is call-specific, and not at all related to the status of the terminal. Referring, for example, to column 3, lines 1-9 of Dean, is stated that:

"the invalid call terminating method and system of the present invention, or enhanced kill-call capability terminates potentially fraudulent calls in the mobile home market of the mobile telephone service subscriber. This capability enables service providers to tear down fraudulent calls by using either a third party client application or a technician interface (TI) command."

It is evident, therefore, that although calls may be terminated in Dean, the terminal from which the invalid or fraudulent call originates remains attached to the network. Therefore, according to Dean, a new call can be initiated immediately after a previous call has been "killed."

Additionally, Dean does not disclose or suggest any configuration which utilizes an identification being associated with a particular terminal, and then deriving a signature for



the identification. As discussed above, independent claim 9 recites the steps of associating an identification for a terminal, deriving a signature for the identification, and allocating a pair consisting of the identification and the signature to the terminal. Independent claim 1, directed to a method for performing a detach, comprises the steps of sending a detach request, with the detach request including an identification for the terminal and the derived identification signature. In claim 1, when the detach request is received, the detach request is compared to a record of registration data, and detach occurs if the received detach request coincides with the record of registration data. With respect to the method of claim 9, directed to registration, the identification and the derived signature are then allocated to the terminal. There is simply no comparable features which exist in Dean.

Additionally, the Official Action points to column 7, lines 62-67 of Dean, as disclosing a configuration which is comparable to the method for detach as recited in claim 1. However, the section of Dean which is cited by the Examiner discusses the generation of a "signature" as part of the kill-call process. In other words, a signature is generated if a lookup (column 7, lines 50-55) fails, and the call is appropriate for a kill-call message. This is quite opposite from the present invention; according to the method for performing a detach which is recited in claim 1, a detach request is initiated by a terminal which has already been associated with an identification and wherein an identification signature has been derived. The detach request is then compared with a record of registration data, and if there is a match with the detach request and the registration data, thereby validating the detach request as coming from the authorized terminal, the detach occurs. The method for registration of a terminal as recited in claim 9 includes the steps

of associating an identification for a terminal, then deriving a signature, and allocating a pair consisting of the identification and the signature to the terminal. Applicant strongly but respectfully submits, therefore, that although the term "signature" is common to the present invention and to Dean, the use and meaning of the signatures are quite different. It is strongly and respectfully submitted, therefore, that Dean fails to provide a basis upon which to reject any of presently pending claims 1-21.

Kuriki, used in the "obviousness" rejection of claims 7, 8, and 10-18, is cited as disclosing a communication system capable of using a plurality of subscriber identity media sharing a single subscriber identity information. Kuriki, however, fails to cure any of the significant deficiencies in Dean, in that Kuriki is merely directed to a communication system wherein a plurality of subscriber identity modules mounted to mobile stations share a single international mobile subscriber identity. However, there is no disclosure nor suggestion in Kuriki of a method of registration, a method of detach, a terminal device, a network controlling device, or a telecommunication system as recited in any of claims 1-21. A combination of Dean and Kuriki would fail to disclose or suggest a method of performing detach, a method of registration, or any of the devices recited in the presently pending claims. There is simply no disclosure nor suggestion, in either of the cited references when viewed alone or when combined, of the steps of sending a detach request, receiving a detach request, comparing the received detach request with a record of registration data, and detaching the terminal from the network if the received detach request coincides with the record of registration data, as recited in presently pending claims 1-8 and 19-21. Furthermore, there is no disclosure nor suggestion of a method of registration of a terminal as recited in any of claims 9-18, which comprises the steps of

associating an identification for the terminal, deriving a signature for the identification, and allocating a pair consisting of the identification and the signature to the terminal.

With respect to the dependent claims 2-8, and 10-21, applicant respectfully submits that each of these dependent claims recite additional limitations which are neither disclosed nor suggested in Dean alone, or in a combination of Dean and Kuriki. Claim 2, for example, recites that the sending of the detach request message is initiated upon detection of a predetermined state of the terminal. Since no combination of Dean and/or Kuriki discloses any type of detach message as recited in claim 1, there can be no disclosure nor suggestion of the sending being initiated upon the detection of a predetermined state of the terminal. Claims 3-5 are dependent upon claim 2, and recite additional limitation of the predetermined state.

Claims 6-8 are dependent upon claim 1, and recites additional information regarding record of registration data, and the identification associated with the mobile terminal. Each of these claims, therefore, stand alone as being separately patentable. Similarly, claims 19-21 are dependent upon claim 1, and recites a terminal device, a network controlling device, and a telecommunication system having elements of the method of performing detach as recited in claim 1. No such terminal device, network controlling device, or telecommunication system is disclosed or suggested in the cited prior art.

With respect to claims 10-18, these claims are all dependent upon claim 9, but recite additional steps of sending a registration request, or specific aspects of the registration request and/or association of the identification with the terminal. Since neither Dean nor Kuriki disclose or suggest any aspects associated with registration as

recited in claim 9, neither Dean nor Kuriki can be interpreted as disclosing any of the more specific details regarding the registration request or the association as provided in those claims.

It is well established in United States patent law that in order for a rejection to be proper under 35 USC § 102, each and every element of the claimed invention must be disclosed in a single reference (*Hybritech v. Monoclonal Antibodies Inc.*, 231 USPQ 81 (Fed. Cir. 1986), *In re Donohue*, 226 USPQ 619 (Fed. Cir. 1985)). It is respectfully submitted that Dean fails to disclose or suggest each and every element of any of claims 1-21, and in particular claims 1-6, 9, and 19-21.

With respect to the obviousness rejection of claims 7, 8 and 10-18 over Dean and Kuriki, it is respectfully submitted that MPEP § 2143 requires that in order for a rejection to be proper under 35 USC § 103, there must be some teaching, suggestion, or motivation to combine prior art references in such a way as to yield the claimed invention.

Due to the significant deficiencies in Dean which are discussed above, it is respectfully submitted that Kuriki cannot be interpreted as curing any of these deficiencies. Furthermore, applicant respectfully submits that it is well established in United States patent law that it is improper to ignore specific limitations of a claimed invention which distinguish over a cited reference or references. See, for example, *In re Glass*, 176 USPQ 49 (CCPA 1973), *In re Chandler*, 117 USPQ 361 (CCPA 1958). This aspect of law was reiterated in more recent cases such as *Sensonics Inc. v. Aerosonic Corporation*, 38 USPQ 2d 1551 (Fed. Cir. 1996), which repeated the requirement that in order for a rejection to be proper under 35 USC § 103, there must be some teaching, suggestion or motivation to modify or combine references to yield the claimed invention. It is

respectfully submitted that there is no teaching, suggestion or motivation in the art to combine the kill-call system of Dean with the communication system of Kuriki in any way which would yield methods or devices according to the presently pending claims. It is therefore respectfully requested that each of claims 1-21 be found to contain allowable subject matter.

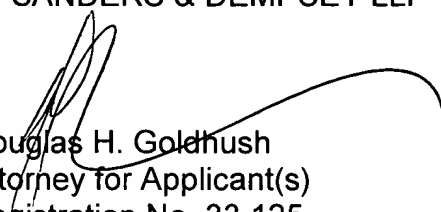
#### X. CONCLUSION

In view of the above, applicant respectfully but strongly submits that each of presently pending claims 1-21 recite certain clear and significant distinctions which are neither disclosed nor suggested in the cited prior art. Applicant respectfully submits that these distinctions are more than sufficient to render the claimed invention unobvious to a person of ordinary skill in the art. This final rejection being in error, therefore, it is respectfully requested that this Honorable Board of Patent Appeals and Interferences reverse the Examiner's decision in this case, and indicate the allowability of pending claims 1-21.

In the event that this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees which may be due with respect to this paper may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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Atty. Docket No.: 60282.00013

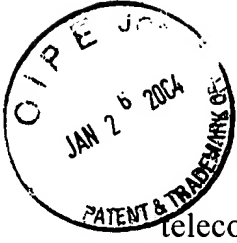
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Encls: Appendix 1 - Claims  
Appendix 2 - Drawings  
Copy of IDS as filed on January 23, 2004

## APPENDIX 1

### CLAIMS ON APPEAL



1. A method for performing a detach of a terminal registered to a telecommunication network by associating an identification for said terminal, deriving a signature for said identification, and allocating a pair consisting of said identification and said signature to said terminal, said method comprising the steps of:

    sending a detach request including said identification and said identification signature from said registered terminal to said network;

    receiving said detach request at the network side;

    comparing said received detach request with a record of registration data of said terminal kept at the network side; and

    detaching said terminal from said network, if said received detach request coincides with said record of registration data.

2. The method according to claim 1, wherein sending of said detach request message is initiated upon detection of a predetermined state of said terminal. 2116-201

3. The method according to claim 2, wherein said predetermined state is a power off state.

4. The method according to claim 2, wherein said predetermined state is a low battery state.

5. The method according to claim 2, wherein said predetermined state resides in a removal of a SIM module from said terminal.

6. The method according to claim 1, wherein said record of registration data contains said pair consisting of said identification and said identification signature, and said comparison is effected for each of said data items forming said pair.

7. The method according to claim 1, wherein said identification is the temporary mobile subscriber identity.

8. The method according to claim 1, wherein said identification is the international mobile subscriber identity.

9. A method for registration of a terminal to a telecommunication network, said method comprising the steps of:

associating an identification for said terminal;

deriving a signature for said identification; and

allocating a pair consisting of said identification and said signature to said terminal.

10. The method according to claim 9, further comprising the step of sending a registration request from said terminal to said network and wherein said associating is effected in response to the receipt of said registration request.

11. The method according to claim 10, wherein said registration request is an attach request for initial registration of said terminal in said network.



12. The method according to claim 10, wherein said registration request is a location update request for updating a previous registration of said terminal in said network.

13. The method according to claim 10, wherein said registration request is a cell update request for updating a previous registration of said terminal in said network.

14. The method according to claim 10, wherein said registration request is a URA update request for updating a previous registration of said in said network.

15. The method according to claim 9, wherein said associating of said identification is arbitrary.

16. The method according to claim 9, wherein said allocating is effected in a secure mode.

17. The method according to claim 9, wherein said identification is the temporary mobile subscriber identity.

18. The method according to claim 9, wherein said identification is the international mobile subscriber identity.

19. A terminal device adapted to the method according to claim 1.

20. A network controlling device adapted to the method according to claim 1.

21. A telecommunication system consisting of at least one terminal and at least one network controlling device controlling at least one radio transceiver device, adapted to carry out the method according to claim 1.

**APPENDIX 2**

**DRAWINGS OF APPLICATION SERIAL NO. 09/627,684**

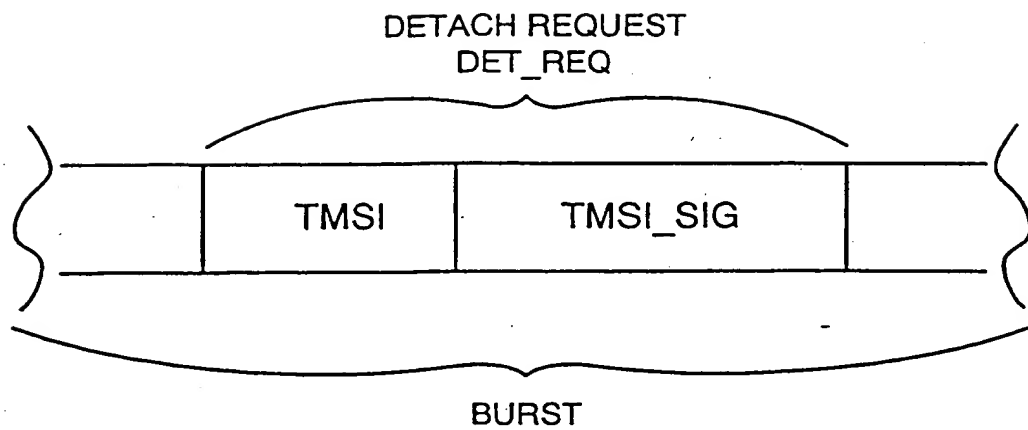


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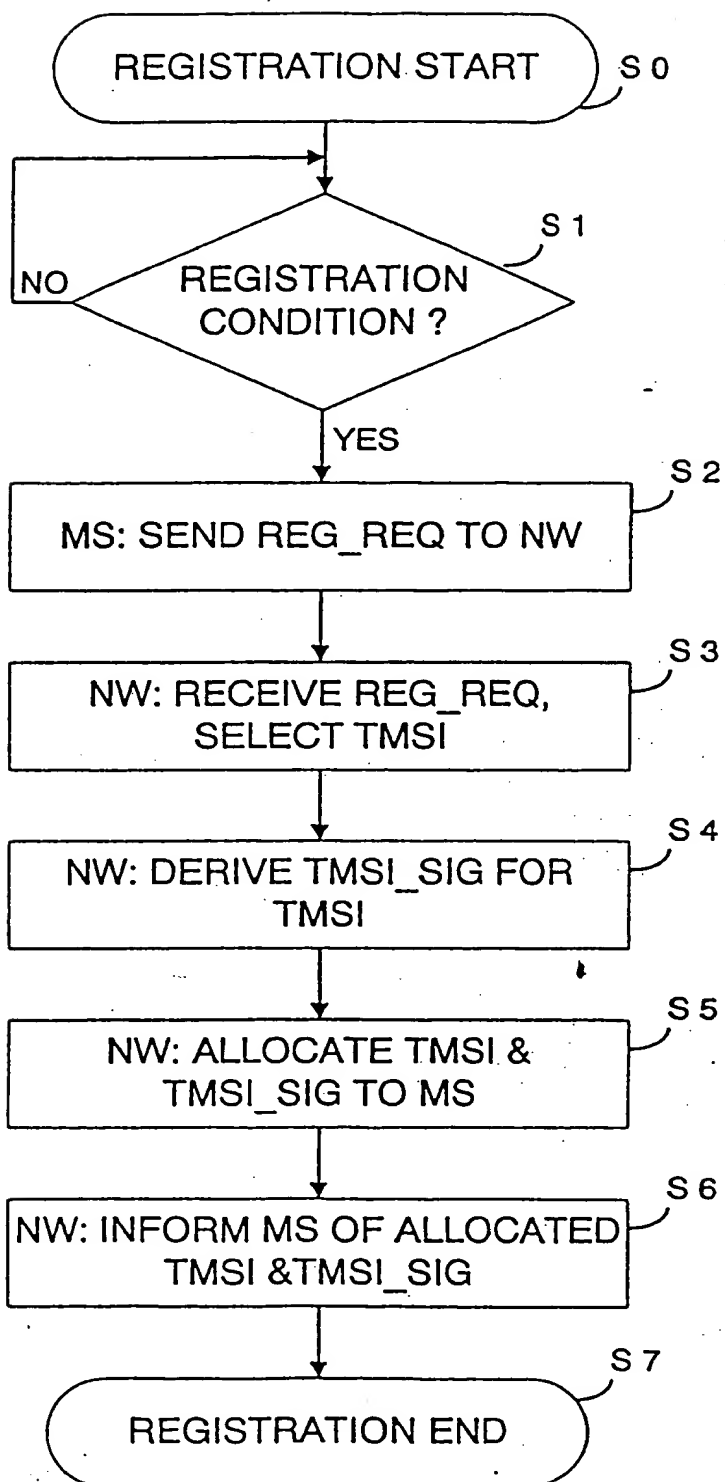
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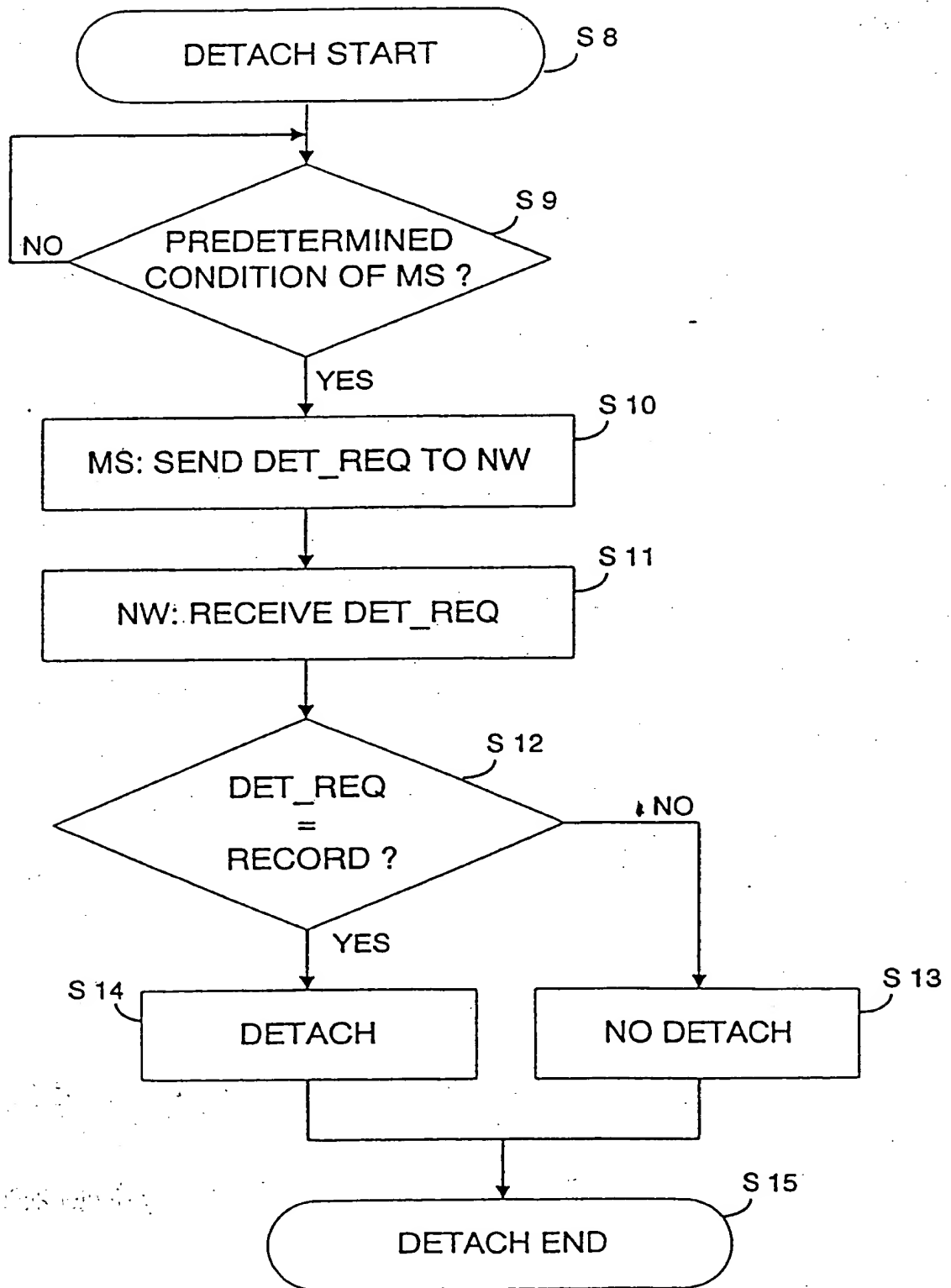
FIG. 3

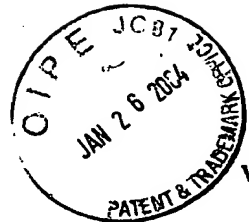


1/3  
FIG. 1



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FIG. 2





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FIG. 3

